

ServiceInsights

FOR INDEPENDENT SERVICE CENTERS

Genuine  Parts

ACDelco

OCT-DEC 2012

2013 Cadillac ATS... A New Face in the High-Performance Compact, Rear-Wheel Drive Segment

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- > Hardworking snowplow equipped trucks offer transmission replacement opportunities
- > Fall in Las Vegas is automotive industry focused — GM at SEMA, APEX, ATRA
- > ATS Service Procedures
- > New online rewards program starts with GM Powertrain component rebates
- > TechConnect with more valuable service information



More Inside:

Engine options include next generation four-cylinders. 2.0L turbo is offered with a manual transmission.



www.GenuineGMParts.com

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New ideas that can benefit how your shop operates and profits.

Correction: Some issues of the July-September issue of GM Service Insights incorrectly identified the 2013 Malibu on the cover as a 2012 model.

Genuine  | Parts

GM ServiceInsights Online

More Genuine GM Parts resources and links.

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www.gmserviceinsights.com



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GM OE Service Parts Update

Heads Up, Snowplow Season Is Coming **When Time Is Money, Look To Genuine GM Parts Reman Transmissions**

When the white stuff flies in the winter, it looks green to snowplow operators. But snowfall can quickly start to look more like money running down the drain when their vehicles are sidelined.

That's all too likely a scenario for plowers whose vehicles have overworked transmissions that may be teetering on the edge of failure. Depending on if and when failure occurs, the ability to get back on the road quickly with a functional transmission is critical.

As an Independent Service Center (ISC) serving those customers who use GM vehicles, the very best way to ensure they can is to look to GM remanufactured transmissions. Encouraging customers to choose the GM transmission designed for the application, rather than a non-OE aftermarket product, ensures speedy turnaround, top-notch performance and better value for the repair dollar.

Customers who equip Chevrolet Silverado and GMC Sierra pickups, and occasionally SUVs like Tahoes, Suburbans and Yukons, with snowplows can easily replace original 4L60E and 4L80E transmissions with updated reman versions readily available through GM dealers. Each reman product is faithful to original OE design and engineering and, moreover, incorporates updates that yield an even better transmission than originally installed.

Just as important, the transmissions in most cases can be sourced from a dealer either the same or next day and installed within hours. For snowplow operators who can't bear the thought of sitting out a snowstorm, and customers who urgently need their services, that's money in the bank.



GM OE Service Parts Update (cont'd.)

There's no telling how many pickups used to plow snow are at risk of being suddenly taken out of service with a transmission problem. The older the vehicle and the more it's been subjected to demanding conditions like the back and forth of plowing and otherwise heavy use in other applications, the closer the day of reckoning, even with high-quality, factory-installed GM transmissions.

Chris Thomas, GM Customer Care & Aftersales product development manager for transmissions, says Chevrolet and GMC trucks from model years 1999-2007 make up the bulk of the demand for reman 4L60E and 4L80E transmissions.

"Some of these trucks may have 200,000 miles or more and have been used in landscaping operations during the summer and snowplowing during the winter months for a number of years, and all of a sudden the transmission goes out," Thomas says. "Gear sets can fail, clutches burn out, any number of things can go wrong after a long period of heavy use."

With a GM remanufactured replacement, your customers get a solution that's far superior to either a competing non-GM reman product or, most assuredly, a time consuming repair or rebuilding job. With one call, a GM 4L60E or 4L80E can be at an ISC's door in a day, a product rebuilt to exacting specifications and ready to install.

Hydra-Matic 4L60E



Hydra-Matic 4L80E



"One of the most important components of a transmission used in these types of applications is a torque converter with the proper stall speeds that can provide the torque needed for pushing snow," Thomas adds. "In a lot of cases an aftermarket company uses a generic torque converter which may or may not work well in these types of applications. The GM product is designed to handle this kind of abuse."

Sweetening the deal, Genuine GM Parts reman transmissions are priced competitively. Through GM's OverPOWER The Competition pricing program, dealers can offer great deals that bring the final price closer to that of other aftermarket suppliers who can't match GM's quality. Plus, the transmissions carry GM's standard 3-year/100,000-mile nationwide warranty.

To top it off, GM has taken steps to ensure the transmission inventory is in place. While predicting snowfall winter-to-winter and, in turn, the likely demand for transmission replacements is difficult, GM has tweaked its pipeline to position 4L60E and 4L80E transmissions in geographic areas where demand could spike if Old Man Winter decides to reassert himself this year. To that, GM snowplowers may feel emboldened to say, "Bring it on."

Repair Industry News & Updates

www.atra.com

**Oct. 27 - 29, 2012:
Automatic Transmission
Rebuilder Association (ATRA)
Powertrain Expo,
Las Vegas, NV**

The Genuine GM Parts
booth is located at 523.



www.aapexshow.com

**Oct. 30 - Nov. 2, 2012:
Automotive Aftermarket
Product Expo (AAPEX),
Las Vegas, NV**

The ACDelco
booth is located
at 4838.



www.semashow.com

**Oct. 30 - Nov. 2, 2012:
Special Equipment Market
Association (SEMA),
Las Vegas, NV**

The General
Motors booth is
23743 and 24267.



The Technical Side

2013 CADILLAC ATS

New Model Will Challenge the World's Best Compact Luxury Cars

Engine Options Include Next Generation four-cylinders. 2.0L turbo is offered with a manual transmission – a choice that's unavailable in some luxury cars. Designed to challenge the world's best smaller premium cars the ATS boosts one of the lowest curb weights in the segment – less than 3,400 pounds (1,542 kg).

Germany's famed Nürburgring served as one of the key testing grounds, along with additional roads, race tracks and laboratories around the globe, where ATS engineers balanced performance with Cadillac's trademark refinement. Contributing components and features include:

- Rear-wheel drive, plus available all-wheel drive
- High-strength steel (HSS) and ultra-high-strength steel (UHSS) for reduced mass and optimized crash protection
- Cadillac's first five-link independent rear suspension using lightweight, high-strength steel and efficient straight link designs
- A multi-link double-pivot MacPherson-strut front suspension with direct-acting stabilizer bar
- Underbody aerodynamic shields

The ATS is offered as a well-equipped standard model and in Luxury, Performance and Premium collections.



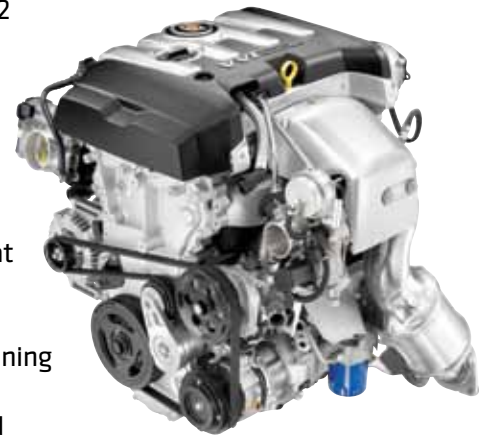
ATS powertrains

The engine lineup starts with a standard 2.5L four-cylinder; a 2.0L turbocharged four-cylinder and a V-6 are available. The four-cylinders are next-generation engines, with the 2.0L turbo offered with a manual transmission – a choice that's unavailable in some luxury cars.

Increased efficiency was a priority for the new four-cylinders. It was achieved partly through lower engine friction, which was reduced by up to 16 percent using new technologies such as a variable-displacement oil pump and, with the 2.5L, an actively controlled thermostat.

The 2.5L is rated at 202 horsepower (151 kW) and 191 lb.-ft. torque (259 Nm), while the 2.0L turbo – the latest in a series of technologically advanced, high-output turbo engines – is rated at 272 horsepower (203 kW) and 260 lb.-ft. of torque (353 Nm). The award-winning 3.6L V-6 is rated at 321 horsepower (239 kW) and 275 lb.-ft. of torque (373 Nm).

At 136hp/L, the new 2.0L turbo is one of the most power-dense engines in the industry, topping engines from European competitors.



2013 Ecotec 2.0L I-4 VVT DI Turbo (LTG) for Cadillac ATS

The Technical Side (cont'd.)

All of the engines feature direct injection and dual overhead camshafts with continuously variable valve timing, which help optimize power and efficiency, as well as reduce emissions. And all of the engines are matched with six-speed transmissions, including the Hydra-Matic 6L45 automatic with tap-shift control, and a six-speed manual available with the turbo engine.

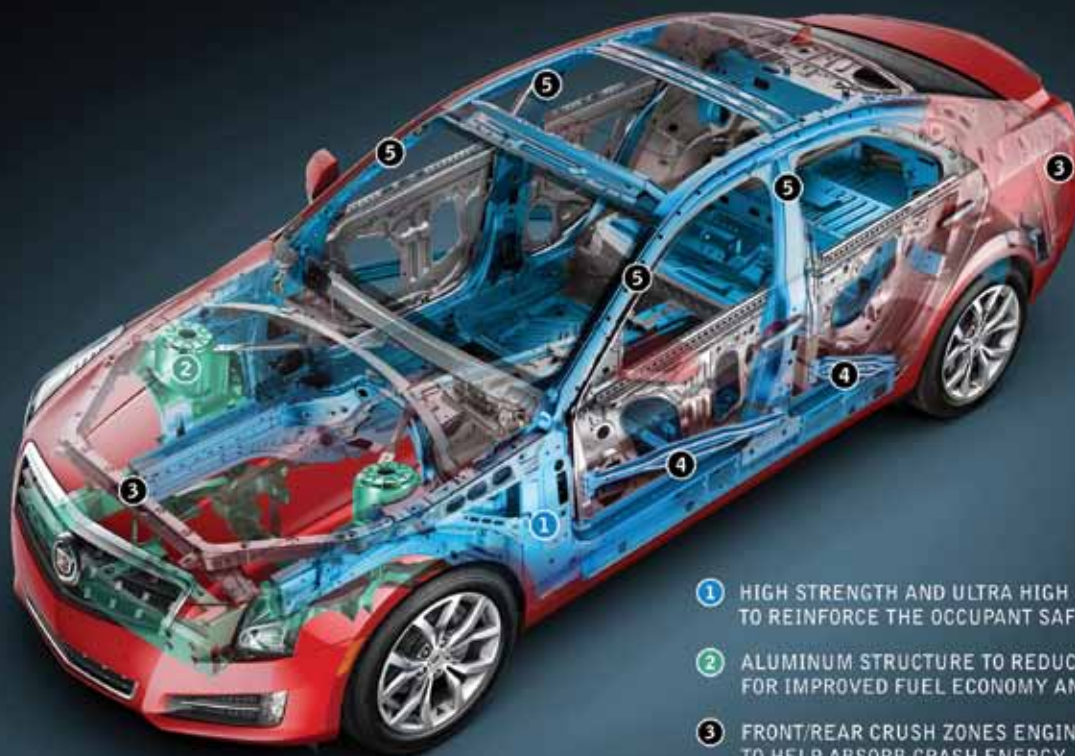


2013 Hydra-Matic 6L45 (MYA) Six Speed RWD Automatic Transmission for the Cadillac ATS.

Extensive Use of High-Strength Steels

Load and space management – what engineers and mathematicians call topology – was applied during the design of the car's structure. That helped ensure mass efficiency was built into the very foundation of this all-new architecture. Advanced computational development helped determine the most efficient design, emphasizing strength and stiffness via the use of high-tech materials. High-strength steel (HSS) and ultra-high-strength steel (UHSS) are used most effectively to reduce mass and optimize crash protection.

See page 7
for Cadillac
ATS service
procedures.



2013 Cadillac ATS

- ① HIGH STRENGTH AND ULTRA HIGH STRENGTH STEELS TO REINFORCE THE OCCUPANT SAFETY CAGE
- ② ALUMINUM STRUCTURE TO REDUCE WEIGHT FOR IMPROVED FUEL ECONOMY AND PERFORMANCE
- ③ FRONT/REAR CRUSH ZONES ENGINEERED TO HELP ABSORB CRASH ENERGY
- ④ DOOR BEAM AND LOWER DOOR SILL REINFORCED TO RESIST SIDE IMPACT
- ⑤ A- AND B-PILLARS REINFORCED TO RESIST ROOF CRUSH

Head Down Your Training Path at the ACDelco Training Website



ACDelco offers a number of training opportunities for Professional Service Center program members. Service center technicians can take a variety of hands-on, Web-based, and self-study courses covering all aspects to technical automotive repair. With all these options, it can be tough to keep track of what courses have been completed, or what courses to take next. The new training paths available on the ACDelco training website provide a road map to planning successful training efforts.

Go to www.acdelcotechconnect.com and enter your log-in information to view a training progress chart customized to your training records. Under the Manage My Training section on the Home page, a training progress status report provides an at-a-glance snapshot of progress made toward completion of each training path.

The status report shows all the training paths to which a person is currently assigned, followed by a chart that identifies the courses completed in each path. When select Training Paths (Brake Specialist, Electrical and Electronics Specialists, Engine Performance Specialists and Heating &

Air Conditioning Specialists) are completed, participants receive a custom Training Excellence Specialist magnetic medallion to proudly display in the shop.

The status report also can be displayed to show detailed classes for each training path. Click the course number and title to view details on a specific course, launch or enroll in the course, or to test out of the course (Note: test out option only available for specific courses).

Manage My Training

The Manage My Training section on the ACDelco training website provides links to many options, all on one screen, to make it easy to plan and track training, enroll in courses and record completed training. These links include:

- Training progress status report
- Schedule of enrolled courses
- Training path
- Training records and history
- Certificates received for completed courses
- Self study reference materials

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- Scan the code to download a PDF of the current issue
- www.acdelcotechconnect.com, click the TechConnect Magazine link

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Head Down Your Training Path at the ACDelco Training Website – continued from page 1



Reports (Training Progress Status Report)

Click the course number and title to view details on a course.

- Enroll in a course from a list of currently scheduled courses
- Seminar participation
- Request unscheduled course

New Training Paths

To keep up with today's technicians' varying skill sets, ACDelco recently added four new training paths to the training website. Training paths now available include:

- Advanced Propulsion
- Brakes
- Electrical
- Engine Performance
- HVAC
- NEW – Automatic Transmission/Transaxle Specialist
- NEW – Body Electrical and Communication Specialist
- NEW – Light Duty Diesel Specialist
- NEW – Suspension and Steering Specialist
- COMING SOON – Manual Transmission

Take advantage of these new training paths today to enhance your knowledge in these areas. To add a training path to your profile:

1. Click on the Training Path tab in the Manage My Training section from the Home page.
2. Click on Add/Remove Training Paths
3. Select the training path(s) that you would like to add under the Add/Remove column

Training Path Name	Add/Remove
ACDelco Employee	<input type="checkbox"/>
ACDelco Start Program	<input checked="" type="checkbox"/>
Administrative/Clerical	<input type="checkbox"/>
Alternative Propulsion Specialist	<input checked="" type="checkbox"/>
Automatic Transmission/Transaxle Specialist	<input checked="" type="checkbox"/>
Body Electrical and Communication Specialist	<input checked="" type="checkbox"/>
Brakes Specialist	<input checked="" type="checkbox"/>
Electrical and Electronics Specialist	<input checked="" type="checkbox"/>
Engine Performance Specialist	<input checked="" type="checkbox"/>
Heating & Air Conditioning Specialist	<input checked="" type="checkbox"/>
Light Duty Diesel Specialist	<input checked="" type="checkbox"/>
Owner/Manager	<input type="checkbox"/>
Product Knowledge, Bus. Fundamentals	<input type="checkbox"/>
Sales Personnel	<input type="checkbox"/>

Four new training paths are now available.

4. Click Update My Path

5. Click Back to Training Path to return and view your newly added training paths

You must complete all of the courses in each of the three levels (Entry, Intermediate, and Professional) in order to successfully complete a training path. A number of recommended courses also are listed to further enhance your competency in the training path.

If you have questions regarding completion of the training paths, contact the ACDelco Training Website Help Desk at 1-800-825-5886, prompt #1.

Additional information is available by clicking Help at the bottom of the Home page. A list of Frequently Asked Questions offers answers about common tasks performed by students and managers responsible for other employee's training.


– Thanks to Greg St. Aubin

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ACDelco TechConnect is published bi-monthly and online for Independent Service Centers and Key Fleet accounts to provide timely service information, increase knowledge and improve the performance of the service center.

ACDelco 360 represents our mission to look at our businesses at every possible angle to provide value and assistance to our distributors and their customers as well as offer a full circle of support with programs, tools, training and marketing focused on enhancing and growing our partnership successfully.


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- Log in to the ACDelco LMS, click the Resources link

ACDelco service tips are intended for use by professional technicians, not a "do-it-yourselfer." They are written to inform those technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions and know-how to do a job properly and safely. If a condition is described, it cannot be assumed that the information applies to all vehicles or that all vehicles will have that condition.

All materials and programs described in this magazine are subject to change. Submission of materials implies the right to edit and publish. Inclusion in the publication is not necessarily an endorsement of the individual or the company.

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GM Door Hinge Pin and Bushing Kits

Think about how many times you enter and exit a vehicle in a typical day. Now, multiply that by the amount of work done with a service fleet vehicle. Repeated use in harsh environments can take a toll on door hinges. Using GM door hinge pin and bushing kits to make door hinge repairs on many GM vehicles can be easier and faster than costly door hinge replacements.

These Original Equipment (OE) quality door hinge pin kits — available at GM dealerships — consist of pins, bushings and the hardware needed to secure them onto an existing welded-on hinge assembly. The kits alleviate the time and expense of completely removing the factory-installed assembly, installing a bolt-on replacement, and re-aligning the door.

Installation of a hinge pin kit typically involves removing the door, grinding off and removing the old pins, bolting on new pins, adding bushings (included with the kit), and lifting the door back in place.



Full-size truck side door hinge pin kit

The kits are available for a number of 1996 and later GM trucks, vans and SUVs. They are designed specifically for GM applications in a range of quality and pricing options.

GM engineers design OE door hinges to exceed 200,000 cycles (open-close operations). Many fleet vehicles exceed those cycle times, resulting in sagging or hard-to-close doors. Environmental issues and a lack of maintenance by



Van side cargo door hinge pin kit

owners also can contribute to hinge pin and bushing wear over a period of time.

In most cases, the pin kits are made of top quality stainless steel for durability and corrosion resistance, and include an integrally machined or threaded grease fitting. The grease fitting provides grease to the bushing ride surface for excellent wear and long life. The pins also have grooves that lock the pins in place to prevent rotation in the base of the hinge and provide a tight fit. The design of the pins, with a hollowed-out center, allows lubrication to be pushed into the tight tolerance areas of the hinge.

For customers looking for a more economical solution, non-greasable pin kits also are available.

Installers should use care in removing old pins. Carefully use a grinder to remove only the peened over portion of a factory installed pin.

For more information about the door hinge pin and bushing kits, go to www.genuinegmparts.com and click Collision Repair at the top of the page. Click Brochures, Sell Sheets and Videos for product details about the available pin and bushing kits.

– Thanks to

Part Number	Years	Make/Model
19260061	2007-2013	(New Style) Chevrolet Silverado, Suburban, Tahoe
		(New Style) GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL
	2007-2012	Chevrolet Avalanche
		Cadillac Escalade ESV & EXT
19260063	2007-2013	(New Style) Chevrolet Silverado, Suburban, Tahoe
		(New Style) GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL
	2007-2012	Chevrolet Avalanche
		Cadillac Escalade ESV & EXT
19260663	1996-2013	Chevrolet Express
		GMC Savana
19260056	2002-2009	Chevrolet TrailBlazer
	2002-2007	GMC Envoy
	2004-2007	Buick Rainier
	2005-2007	Saab 9-7X
19260058	1999-2007	Chevrolet Silverado
		GMC Sierra
	2000-2006	Chevrolet Suburban, Tahoe
		GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL
		Cadillac Escalade ESV & EXT
19260060	1999-2007	Chevrolet Silverado
		GMC Sierra
	2000-2006	Chevrolet Suburban, Tahoe
		GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL
		Cadillac Escalade ESV & EXT
89025539	1999-2007	Chevrolet Silverado
		GMC Sierra
	2000-2006	Chevrolet Suburban, Tahoe
		GMC Yukon, Yukon XL, Yukon Denali, Yukon Denali XL
		Cadillac Escalade ESV & EXT
89025543	1999-2007	Chevrolet Avalanche
		Chevrolet Silverado Extended Cab Models
		GMC Sierra Extended Cab Models

New Liquefied Petroleum Gas Chevrolet and GMC Cutaway Vans

The 2012 Chevrolet Express and GMC Savana 3500 and 4500 Cutaway Vans can now be equipped to operate on Liquefied Petroleum Gas (LPG). They include RPO K07 (Vehicle Fuel – Liquefied Petroleum Gas, Liquid) and RPO UFM(Parts Package – Complete Vehicle Kit, 3-Tank) or RPO UFP (Parts Package – Complete Vehicle Kit, 4-Tank).

Before the Vortec 6.0L V8 engine will start, vaporized LPG fuel in the fuel lines and injectors must be replaced with liquid fuel. A priming process is activated each time the ignition key is turned to ON. This can take eight or more seconds, depending on how long since the engine was last run. The LPG control module illuminates the Wait to Start indicator lamp on the center of the instrument panel during the purge cycle.

Liquefied Petroleum Gas

LPG, the same gas that is delivered to homes for domestic utility use, is mainly propane — a highly flammable, colorless gas. An odor additive enables detection by smell. Propane should never be smelled and a hissing sound should not be heard, except during refueling.

The fuel gauge has been calibrated to LPG pressure and will display full at approximately 36 gallons (136 L) for the 3-tank system and 58 gallons (220 L) for the 4-tank system. LPG quantity is affected by changes in fuel temperature and fuel pressure.

	3-Tank System	4-Tank System
Fuel tank locations	Tanks 1, 2 and 3, 13 x 34 inch each, behind rear axle	Tanks 1, 2 and 3, 13 x 34 inch each, behind rear axle. Tank 4, 11 x 77 inch, mid-ship
System capacity	36 gallons	58 gallons

It is normal to hear the fuel flowing while the engine is running with the ears close to the pipes and other components. Do not confuse this with a hissing sound at fittings that may indicate a fuel leak.

The LPG system, including the tanks and tubing, has been designed to hold gas at a working pressure of 312.5 psi (2,154.6 kPa) and a burst pressure of 1,250 psi (8,618 kPa). It has also been tested for safety. Baffles are built into the tanks to keep the fuel

pump submerged in liquid propane at all times.

System Components

Fuel Tank

Shields – The tank shields protect the LPG tanks. If a tank shield is removed for any reason, always reinstall it before operating the vehicle.

Overfilling Prevention Device

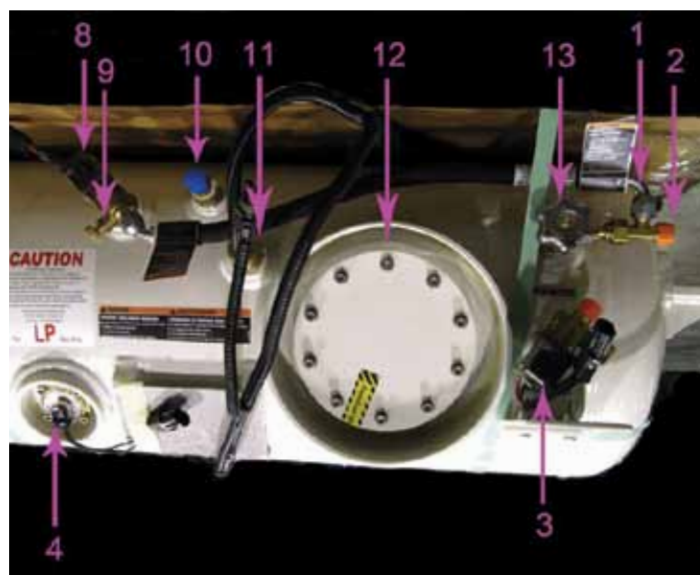
– This device is a float-actuated valve that prevents the tank from being filled more than 80%, to allow room for expansion. A properly functioning OPD valve stops gas flow immediately when the mechanism closes.

Overflow Valves

– Every inlet and outlet valve on the propane tanks has a built-in overflow valve. If propane tries to exit the system at a higher rate than a calibrated amount, the difference in pressure closes the overflow valve and restricts the flow with a 0.080 in. (2 mm) diameter orifice. Once the difference in pressure is equalized, the overflow valve will open.

Pressure Relief Valve – If the pressure in the fuel tank exceeds 312.5 psi (2,154.6 kPa), the valve vents propane vapor to the atmosphere. The pressure will not get this high unless the tank has been overfilled or unless the tank is hotter than 140°F (60°C).

Fuel Pump – The fuel pump is mounted inside of the fuel tank. The purpose of the fuel pump is to increase the line pressure of the liquid propane by 40-60 psi (275-414 kPa) over the internal tank pressure to ensure the propane is always maintained in a liquid state. To service the fuel pump, remove the fuel tank internal components access cover plate.



LPG Tank Components (front tank of 3-tank system shown)

1. LPG fuel bypass loop, mounted to a T-fitting on the return port of the fuel tank
2. Connection for the fuel return line from the distribution block
3. LPG cut-off solenoid, mounted to the outlet port of the fuel tank
4. Fuel level sensor
5. Liquid propane service valve and port
6. Manual shut-off for the liquid propane service valve (handle not included)
7. Spitter valve. Used for visual verification of 80% fill
8. LPG bypass loop solenoid and valve
9. Manual shut-off valve for LPG bypass loop
10. Fuel tank fill port and behind it, inside the tank is the 80% stop fill valve
11. Fuel tank electrical wiring harness pass-through for the internal fuel pump
12. Fuel tank access cover plate, for the internal components
13. Manual shut-off valve for the fuel return line

Fuel Injectors – Each fuel injector has a supply passage and a return passage. A passage between them is restricted by a cooling bushing. As liquid propane passes through the cooling bushing, pressure drops, the propane vaporizes and cooling occurs. This maintains the fuel in a liquid state, regardless of the outside temperature.

Fuel Transfer (4-tank model only)

– On the 4-tank system, the main tank controls all fuel delivery to the fuel injectors. When the liquid propane control module senses a difference in fuel level between the tanks, the secondary supply valve opens and the secondary fuel pump operates. Liquid propane is pumped from the rear tanks into the main tank.

EVAP System – The conventional EVAP control system has been disabled, with the exception of the EVAP purge solenoid valve. All EVAP DTCs also have been turned off, so there is

continued on page 5

FNC Brake Rotors and Refinishing

GM's exclusive Ferritic Nitro-Carburizing (FNC) technology (March & April TechConnect) applied to brake rotors can extend the life of the rotors, but when it does come time for service, it also raises a few questions regarding resurfacing.

Is it acceptable to resurface the brake rotors? Does it remove the specially-hardened layer?

The FNC heat treatment of the brake rotors is approximately 10 microns thick. If the rotors are resurfaced, it will remove the FNC layer from the braking surface of the rotor. This is acceptable, and turns the rotor into a regular rotor without the FNC corrosion protection benefits.

Does removing the FNC layer change the braking dynamics of the vehicle?

Removing the FNC layer can change the output. If a front rotor needs to be refinished, both front rotors should be refinished. If a rear rotor needs to be refinished, all front and rear rotors should be refinished.

Will resurfacing FNC brake rotors wear a brake lathe faster?

There may be some minor wear on the resurfacing equipment since the FNC rotor has a hardened surface.

Can the materials used in some aftermarket brake pads adversely affect FNC rotor performance?

Yes. Semi-metallic-based brake pads may shorten the life of the FNC coating. The FNC coating also can affect the output. Original Equipment Manufacturers' (OEM) brake pads are recommended.

To view a video of the FNC technology process, click here.

<http://www.videoatgm.com/videos/us/en/gm/Technology/GM-New-Ideas-FNC-Rotors/1302333699001/1>

– Thanks to Matt Gibbard



New ACDelco Professional ReadyStruts



ReadyStruts are designed to be durable while providing a consistent damping force.

The new ACDelco Professional ReadyStruts, which include the strut, coil spring, bearing and strut mount, are designed to take advantage of the growing complete strut assembly market. ReadyStruts are easy and quick to install, greatly reducing installation time with no spring compressor or other special tools required.

ReadyStrut Features

ACDelco Professional ReadyStruts help restore a vehicle's ride control and braking effectiveness. Every ReadyStrut assembly features:

- Powder-coated strut, spring and mount that deliver corrosion resistance and long life
- Seamless pressure tubes for added strength and durability
- Powdered metal pistons with precision tolerances for crisp blow-off valving
- Original Equipment Supplier (OES) style manufactured single lip seals that provide better rod reaction and reduced friction
- High performance oil for consistent damping force throughout the operation temperature range

ReadyStruts come with a limited lifetime warranty and are available for many applications that cover the most popular GM models.

For more information, contact your local ACDelco distributor.

– Thanks to Barb Hawkins

New Liquefied Petroleum Gas Chevrolet and GMC Cutaway Vans — continued from page 4

no scan tool support. A unique EVAP sub-system maintains compliant levels of evaporative emissions.

LPG Maintenance Schedule

The LPG engine is designed for routine maintenance (fluids, filters, etc.) similar to gasoline engine vehicles.

The LPG fuel system requires replacement of the LPG fuel fill filter and LPG in-line fuel filter every 30,000 miles (48,280 km).

– Thanks to Sherman Dixon and Chris Graham

The Diagnostic Hotline now offers a flat fee price option that allows customers unlimited calls for one case.

At \$35.00 per case, technicians can have access to live tech support with knowledgeable master technician specialists for every make and model, foreign and domestic, over the phone. With free sign-up and no monthly or yearly membership fees, you simply pay-as-you-go.

There also is a special price option of \$2.85 per minute for ACDelco Professional Service Center (PSC) Program participants with 10 free minutes at sign-up.

Diagnostic Hotline specialists have access to Original Equipment Manufacturers' (OEM) service information and a database with decades of pattern failures. Services include walking customers through a repair as well as providing a variety of technical information as needed, including wiring diagrams, Diagnostic Trouble Code diagnosis, technical service bulletins, and more.

For technical assistance, call 1-800-825-5886, prompt #2 or visit www.DiagnosticHotline.com.

– Thanks to Laura Rollinger

Material Safety Data Sheets on acdelcoadvantage.com

Material Safety Data Sheets (MSDS) are now available on acdelcoadvantage.com.

Log into acdelcotechconnect.com, click "go to acdelcoadvantage" and then type in "MSDS" in the search window.

The MSDS sheets provide procedures for handling or working with a substance in a safe manner, and include information such as physical data, health effects, first aid, storage, disposal, protective equipment, and spill-handling procedures.

[illegible]

– Thanks to Rick Balabon

Accessory Remote Start Kits

When installing an accessory remote start kit on a 2010-2013 Equinox or Terrain, the correct kit part number must be used.

Since changes have been made to the Equinox and Terrain, there are three kit part numbers.

MY 2010/11 Kit 20981996 – includes latch PN 20941413.
This kit should only be used for model years 2010/11.

MY 2012 Kit 22924978 – includes latch PN 22787039.
This kit should only be used for model year 2012 and not for
model year 2013.

MY 2013 Kit 22957875 – includes latch PN 22909711.
This is the only kit to date for model year 2013. This kit will
be ready for sale in the near future.

Prior to the required programming event, Techline Customer Support Center agents will verify the compatibility of the kit part number and model year.

— Thanks to Ann Briedis



The following technical tips provide repair information about specific conditions on a variety of vehicles. If you have a tough or unusual service repair, the **TSS Diagnostic Hotline** can help. Call **1-800-825-5886, prompt #2**, from 8 a.m. to 8 p.m. ET Monday-Friday, to speak with a technical expert with the latest OEM information.

Catalytic Converter Break-In

2004-2012 Cadillac Escalade, Escalade Hybrid; 2004-2012 Chevrolet Avalanche, Express, Silverado, Silverado Hybrid, Suburban, Tahoe, Tahoe Hybrid; 2004-2012 GMC Savana, Sierra, Sierra Hybrid, Yukon, Yukon Hybrid; 2003-2009 Hummer H2; 2008-2009 Hummer H3; equipped with a V8 engine

On vehicles that have recently had the catalytic converter replaced, the Check Engine light may be illuminated and DTCs P0420 and/or P0430 may be set.

On a new vehicle, catalytic converter efficiency DTCs P0420 and P0430 are disabled for the first hour of engine run time to allow "break-in" of the catalytic converter.

If the DTCs set shortly after the catalytic converter is replaced, it may be a result of the engine run time restrictions no longer being in place since the vehicle is no longer new. As a result, the catalytic converter may not have completed a thorough "break-in" cycle after replacement, possibly resulting in a false DTC P0420 and/or P0430. If this occurs, clear the DTCs and perform the following drive cycle.

In order to achieve proper catalytic converter temperature and allow the mat material to out-gas (break-in), perform the following drive cycle and suggestions:

1. Drive vehicle at sustained highway speed for 25 to 30 minutes
2. Bring vehicle to a stop
3. Shut off the engine for 1 minute
4. Restart the engine and resume highway speed for an additional 10 to 15 minutes
5. Bring vehicle to a stop
6. Shut off engine for 1 minute
7. Restart the engine and operate vehicle at the conditions for running the DTC P0420/430 tests and ensure that the vehicle passes these diagnostic tests.

Using Leak Trace Powder

Continued refinement of engineering, materials, and manufacturing processes has greatly reduced the occurrence of fluid leaks (engine oil, transmission fluid, coolant, power steering fluid, and brake fluid). Although rare, fluid leaks occasionally occur, so locating the source of fluid leaks remains an important skill for technicians to master.

There is some important information about leak diagnosis in the GM Service Information. One of the methods mentioned requires the use of leak trace powder.

Because the customer has probably driven the vehicle for awhile with the leak, the fluid will be splattered about and the source of the fluid leak will not be obvious. Attempt to identify the type of fluid from the color, smell and feel of the fluid. Then, thoroughly wipe the suspected leak area with a shop towel. Do not use brake cleaner or other reactive solvents. These solvents can damage rubber gaskets, seals and bushings.

After cleaning the suspected leak area, spray aerosol-type leak tracing powder to cover the area.

Drive the vehicle for 15–20 minutes under city driving conditions until normal operating temperatures are reached. Do not drive at highway speeds because this will cause the leaking fluid to spread.

Trace the leak path through the powder back to the source of the leak and make the necessary repairs.

Leak trace powder also can be used to determine if proper contact is being made between seals on weatherstrips around doors, trunks, hatches, and sunroofs.

Spray the powder on the frame where the seal should make contact and then gently close the panel. Open the panel and inspect the seal. The powder will transfer to the seal where contact is made. Gaps in the powder on the seal indicate a possible wind or water leak area.

Shock Absorber and Strut Fluid Leak Diagnosis

Shock absorbers and strut assemblies are fluid-filled components and will normally exhibit some seepage. Seepage is defined as oil film or dust accumulation on the exterior of the shock housing.

Do not replace shock absorbers with oil or fluid residue only on the bottom or top of the shock absorber and not originating from the shaft seal (the upper part of the lower shock tube) or with light film/residue on approximately 1/3 or less of the lower shock tube and originating from the shaft seal.

Do not replace coil-over shocks or struts with oil or fluid residue only on the bottom of the lower shock absorber tube, coil-over shock absorber components, or strut tube and not originating from the shaft seal, or with light film/residue on the shock absorber tube or strut tube, but not on the spring seat, and originating from the shaft seal.

Replace shock absorbers, coil-over shocks and struts with an oil drip or trail down the lower shock tube or strut and originating from the shaft seal or with an extreme wet film of oil covering more than 1/3 of the lower shock tube or strut tube (pooling in the spring seat on coil-over shocks and struts) and originating from the shaft seal.

Product Information

For free technical assistance and product information regarding specific ACDelco products, contact these toll-free information hotlines staffed by ASE-certified technicians:

Brakes – 1-888-701-6169 (prompt #1)

Chassis – 1-888-701-6169 (prompt #2)

Clutches – 1-888-725-8625

Lift Supports – 1-800-790-5438

Shocks – 1-877-466-7752

Starters and Alternators –
1-800-228-9672

Steering (Pumps, Rack and Pinion,
Gears) – 1-866-833-5567

Wiper Blades – 1-800-810-7096

How to Take ACDelco Training

Go to www.acdelcotechconnect.com and click the Training tab to log in to the ACDelco Learning Management System (LMS).

- To enroll in courses in your training path, open the home page to view your Training Progress Status Report, select Click Here to Show Detail, and then click the course number and title to view details on a specific course and to launch or enroll in the course.
- To enroll in an **Instructor-Led Training (ILT)** course (ILTs are full-day hands-on classroom courses), click Take Training > Instructor-Led Training to view the catalog and select a specific course.
- To enroll in a **Virtual Classroom Training (VCT)** course (VCTs are 1-2 hour live online courses), click Take Training > Virtual Classroom Training to view the catalog and select a specific course.
- To launch a **Web-Based Training (WBT)** course (WBTs are 1-4 hour self-guided online courses), click Take Training > Web-Based Training to view the catalog and select a specific course.
- To launch a **TechAssist (TAS)** course (TAS courses are 15-20 minute online presentations on a specific topic), click Take Training > TechAssist to view the catalog and select a specific course.
- To launch a **Simulation (SIM)** (SIMs require users to complete all repairs for a condition), click Take Training > Simulations to view the catalog and select a diagnostic challenge simulation.

Training Schedule

To search for currently scheduled courses in your area, view the Training in Your Area section on the Home page. Select search terms from the dropdown menus and click the Submit button.

– Thanks to Greg St. Aubin

Current Instructor-Led Training Courses

The following ILT courses are currently being scheduled:

Course Number	Course Name
S-AC07-02.01ILT	Automotive Air Conditioning Advanced Refrigerant System Diagnostics
S-AC07-03.01ILT	HVAC Control System Operation and Diagnostics
S-BK05-01.01ILT	Braking Systems
S-BK05-02.01ILT	ABS Operation and Diagnosis
S-EL06-04.02ILT	Network Communication Diagnosis
S-EL06-10.02ILT	Electrical Power Management
S-EL06-11.02ILT	Enhanced Automotive Circuit Diagnosis
S-EL06-13.01ILT	Body Electrical Global Diagnostics
S-EL06-14.01ILT	Advanced Body Control System Electrical Diagnostics
S-EP08-02.01ILT	Engine Performance Computer Controls and Ignition System Diagnostics
S-EP08-03.01ILT	Engine Performance Air Induction and Fuel System Diagnostics
S-EP08-04.01ILT	Engine Performance Fault Monitoring and Emission System Diagnostics
S-EP08-05.01ILT	Engine Performance Advanced Drivability Diagnostics
S-EP08-81.02ILT	Duramax Diesel Operation and Diagnosis
S-ST10-01.01ILT	Supplemental Restraint Systems

Current Virtual Classroom Training Courses

The following VCT courses are currently being scheduled:

Course Number	Course Name
S-AC07-01.01VCT	HVAC System Components and Lubricants
S-AC07-02.01VCT	HVAC System Operation and Service Hints
S-AC07-03.01VCT	HVAC System Flushing, Recovery and Diagnostics
S-AC07-04.01VCT	HVAC System Engine Cooling, Controls and Communication
S-EL06-01.01VCT	Electrical Circuit Function and Diagnosis
S-EL06-02.01VCT	Testing Electrical Signal and Control Circuits
S-EL06-03.01VCT	Serial Data Communication Networks
S-EL06-04.01VCT	Communication Network Diagnosis
S-EL06-06.01VCT	Two-Mode Hybrid System Safety and Special Tools
S-EL06-07.01VCT	Two-Mode Hybrid System Diagnosis and Repair
S-EM01-01.01VCT	Camshaft Position Actuator Systems
S-EM01-02.01VCT	Active Fuel Management Operation
S-EP08-01.01VCT	6.6L Duramax Engine Diagnosis
S-EP08-02.01VCT	6.6L Duramax LMM Diesel Engine
S-EP08-03.01VCT	6.6L Duramax LGH and LML Diesel Engines

Take the TechConnect Reader Survey

TechConnect provides technicians with the latest technical news and information from ACDelco and the automotive industry. We cover a wide range of topics, including technical information and programs from ACDelco, GM, Professional Service Center Program partners, tool suppliers and more.

To help in developing future issues of TechConnect, we'd like to hear from you.

Go to the link below to take a short survey about what automotive-related service news and information you want most in TechConnect.

Your input is very important to us. Thanks for taking the time to complete the survey.

– Thanks to Rick Balabon



To take the survey, scan the QR code with your smartphone or go to

<https://www.onlineconsumersurveys.com/R.aspx?a=616>

The Technical Side (cont'd.)

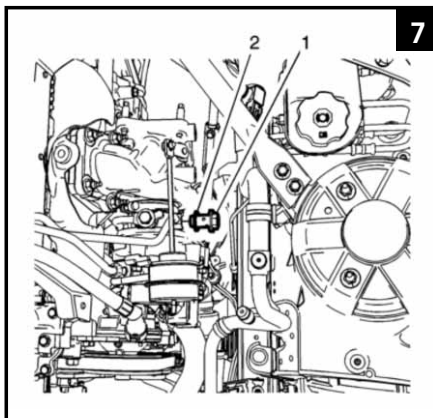
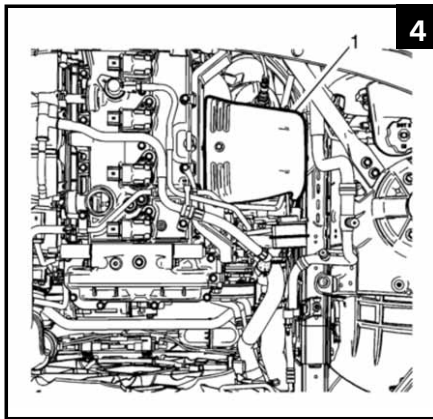
2013 Cadillac ATS Service Procedures (Cont. from page 6)

Even though the 2013 Cadillac ATS is a new vehicle, extensive service and repair information resources are a click away at www.gmtechinfo.com – *Electronic Service Information*. Technicians and shop owners can log on to the site to gain access to subscription services for service procedures and repair manuals. A complete Service Manual is accessible 24/7 through a subscription to the site. Free collision repair procedures are also available by going to www.genuinegmparts.com.

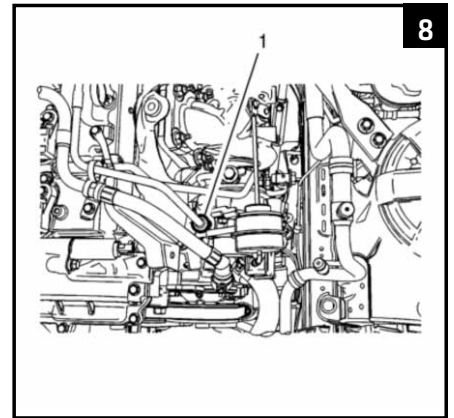
Turbocharger Replacement, 2013 Cadillac ATS 2.0L LTG or 2.4L LCV

Removal Procedure

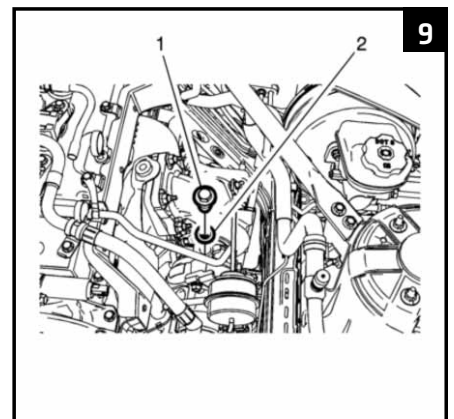
- 1** Remove the intake manifold cover. Refer to *Intake Manifold Cover Replacement*.
- 2** Remove the air cleaner outlet duct. Refer to *Air Cleaner Outlet Duct Replacement*.
- 3** Drain the coolant system. Refer to *Cooling System Draining and Filling*.
- 4** Remove the turbocharger heat shield (1). Refer to *Turbocharger Heat Shield Replacement*.
- 5** Remove the catalytic converter. Refer to *Catalytic Converter Replacement*.
- 6** Remove the charger air cooler inlet air tube. Refer to *Charge Air Cooler Inlet Air Tube Replacement*.
- 7** Remove the turbocharger coolant return pipe bolts (1) and DISCARD gasket (2).



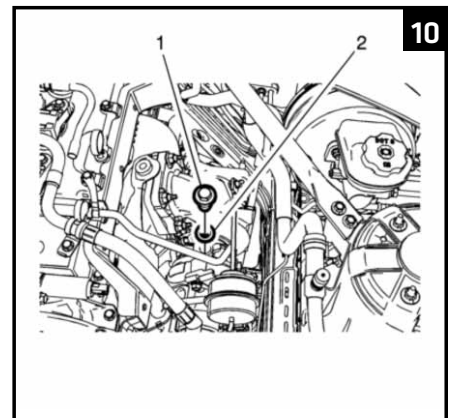
- 8** Remove the PCV hose (1).



- 9** Remove the turbocharger oil feed pipe bolts (1) and DISCARD gasket (2).



- 10** Remove the turbocharger coolant return pipe bolts (1) and DISCARD gasket (2).



The Technical Side (cont'd.)

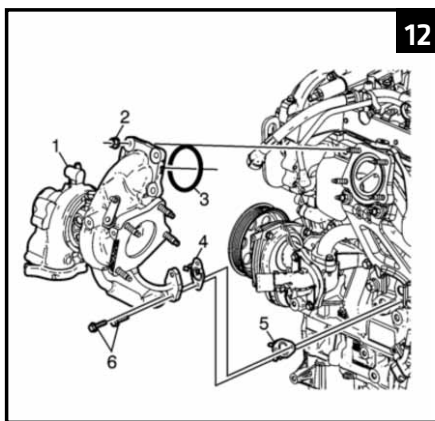
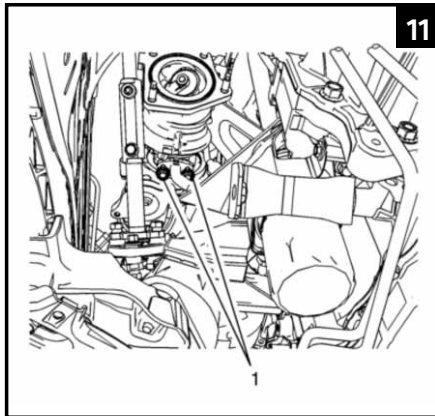
11 Remove the turbocharger oil return pipe bolts (1).

12 Remove the turbocharger nuts (2) and discard.

13 Remove the turbocharger (1).

14 Remove the turbocharger gasket (3) and discard.

15 For turbocharger cleaning and inspection. Refer to *Turbocharger Cleaning and Inspection*.



3 Install the turbocharger (1).

4 Install NEW turbocharger nuts (2) finger tight.

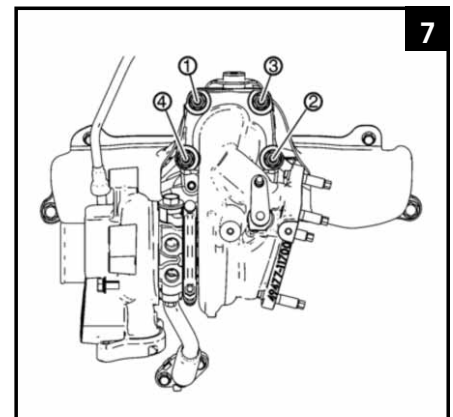
Caution: Refer to Fastener Caution.

Caution: Refer to Torque-to-Yield Fastener Caution.

5 Install the turbocharger oil feed and return pipe bolts (6) at the engine block. tighten the bolts to 10 N·m (89 lb in).

6 Install the PCV hose. Refer to *Positive Crankcase Ventilation Hose/Pipe/Tube Replacement*.

7 Tighten the turbocharger nuts in sequence to 30 N·m (22 lb ft).

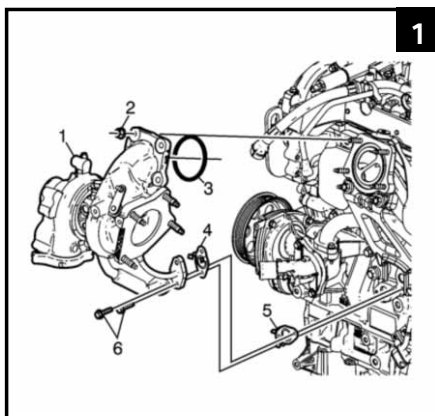


Installation Procedure

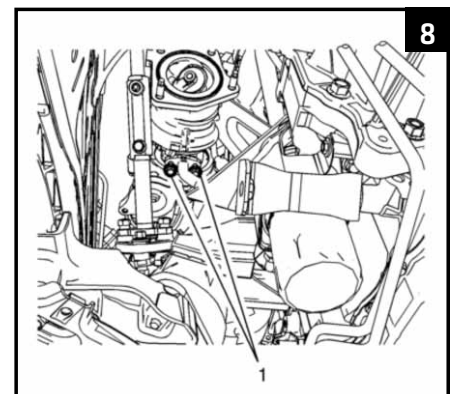
Note: The exhaust pipe studs do not come installed on new turbochargers. If the turbocharger is being replaced, new studs will need to be installed.

1 Install a NEW turbocharger gasket (3) on the turbocharger.

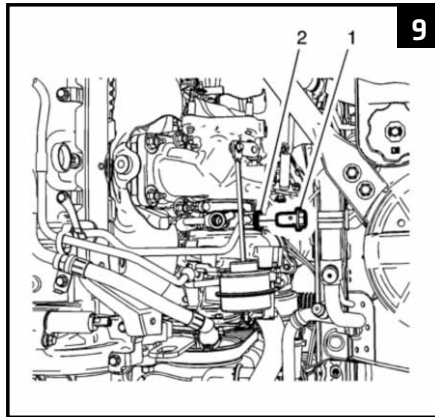
2 Install NEW turbocharger oil feed and oil return pipe gaskets (4, 5).



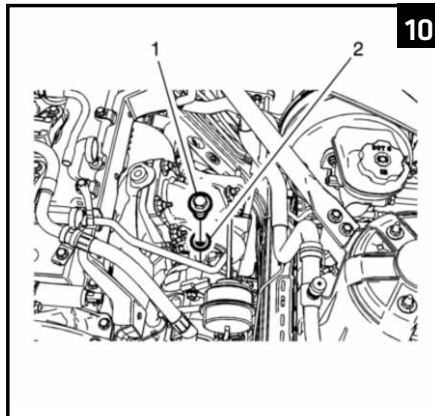
8 Install the turbocharger oil return pipe bolts (1) and a NEW gasket and tighten the bolt to 10 N·m (89 lb in).



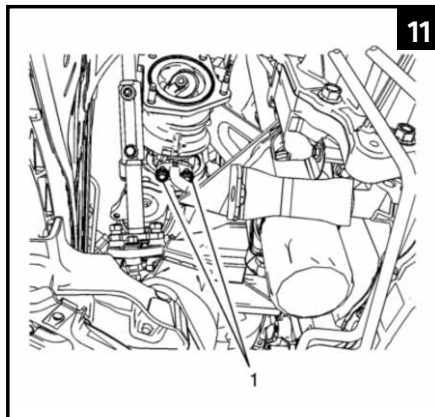
9 Install the turbocharger coolant return pipe bolts (1) and NEW gasket (2) and tighten the bolt to 10 N·m (89 lb in).



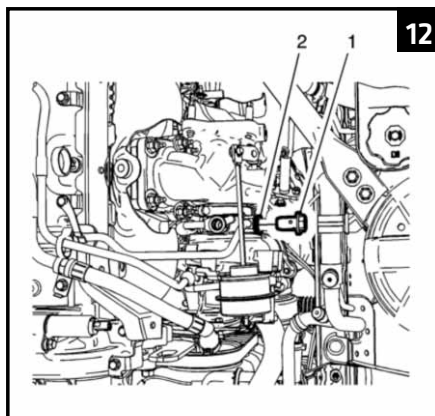
10 Install the turbocharger oil feed pipe bolts (1) and NEW gasket (2) and tighten the bolt to 10 N·m (89 lb in).



11 Install the PCV hose (1).



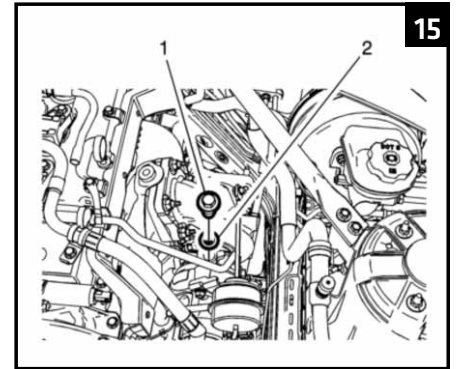
12 Install the turbocharger coolant return pipe bolts (1) and NEW gasket (2) and tighten the bolt to 10 N·m (89 lb in).



13 Install the charger air cooler inlet air tube. Refer to *Charge Air Cooler Inlet Air Tube Replacement*.

14 Install the catalytic converter. Refer to *Catalytic Converter Replacement*.

15 Install the turbocharger heat shield (1). Refer to *Turbocharger Heat Shield Replacement*.



16 Fill the coolant system. Refer to *Cooling System Draining and Filling*.

17 Install the air cleaner outlet duct. Refer to *Air Cleaner Outlet Duct Replacement*.

18 Install the intake manifold cover. Refer to *Intake Manifold Cover Replacement*.

This example of Turbocharger Replacement, 2013 Cadillac ATS 2.0L LTG or 2.4L LCV is just one of many found in the Service Repair Manual. By following the proper repair procedures, technicians can ensure that each vehicle maintains its solid performance and uncompromised safety features for the life.

WE'VE GOT ALL THE PARTS YOU NEED TO DO IT RIGHT, THE FIRST TIME!

If you're doing a powertrain repair procedure, remember that we've got all the parts you need – cylinder heads, actuator motors, electrical, pulleys and tensioners, gaskets – whatever you need to keep your customers happy . . . and coming back.



Business of Repairs

GM Rewards Goes Digital

New Online Rewards Platform Debuts With Powertrain Component Rebates

No, nothing has changed with the products themselves; these proven OE parts are still the best of the best, unrivaled in quality, reliability and ease of installation.

What is new is that not only will your decision to purchase an extensive range of frequently used parts be rewarded, but that you'll have more options and control when it comes to redeeming those rewards.

GM Customer Care and Aftersales' new Genuine GM Rewards Powertrain Component program empowers Independent Service Centers (ISCs) like never before to manage the rewards they can now earn by simply purchasing parts from GM dealers. With the introduction of the Genuine GM Rewards online platform, GM is both simplifying the

process of claiming rewards and greatly expanding the menu of options for ISCs to personalize their earnings.

It all starts with the purchase of qualifying powertrain component parts, which started Oct. 1.

Parts in nine key categories commonly used in major repairs are in the program:

- New and remanufactured cylinder heads
- Cylinder head and intake manifold gasket kits
- Intake manifolds
- Flywheel assemblies
- Timing chain kits
- Transmission overhaul kits
- New and reman torque converters
- Transmission case actuators
- Valve body assemblies

These parts span a variety of GM applications and generate earnPOWER reward points worth 4 percent of the dealer list price. Each point has a \$1 value; thus a \$500 purchase yields 20 points, or \$20.

Over the course of time, rewards can really add up. The Genuine GM Rewards website can be accessed via www.genuinegmparts.com or one can go directly to www.genuinegmrewards.com. This website makes the not-always-easy task of redeeming, tracking, allocating and spending your earned rewards as simple and satisfying as buying Genuine GM Parts through a GM dealer.

Choice and flexibility is the essence of GM's value proposition in this fresh approach to rewarding customers. With the advent of Genuine GM Rewards,





points can be put toward the purchase of thousands of products and services.

The program's flagship redemption vehicle is the Exclusively Yours® (EY) card accepted at more than 150 participating stores and restaurants and from the online EY rewards collection, which includes more than 3,000 items, from books, music and DVDs to travel, event tickets and experiential rewards. Independently of EY, points can even be put toward a GM vehicle purchase, and the EY card can be used at all online merchants that accept the Discover® card. Detailed information and rules on amassing and using points are available at the Genuine GM Rewards website, www.genuinegmrewards.com.

Getting Started

Getting started with the new program is easy. Simply contact a participating GM dealer to obtain a Genuine GM Rewards enrollment certificate. It contains all the information needed to self-register in the Genuine GM Rewards program and establish a personal ID and digital "wallet" that will store and track your points balance. Parts purchases are calculated automatically and points are deposited into the Genuine GM Rewards wallet monthly.

In addition to being a one-stop hub for personal rewards point management, the Genuine GM Rewards site is a gateway to timely communication on issues of interest to ISCs, like product information, leadership messaging and training updates, as well as links to GM websites with technical resources and other information.

Purchasing Genuine GM Parts has always been rewarding – for customers who receive parts of unrivaled

quality, and for installers who can easily install and stand behind what they sell. With Genuine GM Rewards, ISC's now can be rewarded in a new way, for doing what's right for their customers and their business.

Genuine  | **Parts**

**We're one stop. For your shop.
Genuine GM Parts Engines and
Transmissions. Plus, all the
Powertrain Components you need.**

CLIP AND PLACE BY YOUR TELEPHONE

*Give us a call for all of your Genuine GM Parts
needs – all at one convenient location.*

Genuine  | **Parts**